Abstract

An all-optical, optical cross-connect includes first and second pluralities of multiport optical devices. Each of the first plurality of multiport optical devices have at least one input port for receiving a WDM optical signal and a plurality of output ports for selectively receiving one of more wavelength components of the optical signal. Each of the second plurality of multiport optical devices have a plurality of input ports for selectively receiving one of more wavelength components of the optical signal and at least one output port for selectively receiving one of more wavelength components of the optical signal. At least one of the first or second plurality of multiport optical devices are all-optical switches that can route every wavelength component independently of every other wavelength component. The plurality of input ports of the second plurality of multiport optical devices are optically coupled to respective ones of the plurality of output ports of the first plurality of multiport optical devices.